CHAPTER 5

The Killing Fields of Anger: Can Anger Be Controlled?

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INTRODUCTION

It is now widely recognized that a person's life-style, if it includes smoking, a diet high in saturated fat, and lack of exercise, can pose a significant risk for coronary heart disease (CHD)—the major killer of both men and women in the United States. It is less well known, however, that negative emotions, such as anger, excessive worry and anxiety, and depression, can also be damaging to one's heart. In this chapter we explain how negative emotions are able to trigger physiological changes resulting in structural changes that can cause death. Although we will have something to say about a variety of negative emotions and their effects on CHD, the focus will be on anger because the link between anger and CHD has received the greatest research attention and is the best understood.

Questions to be addressed in this chapter include the following: Which mode of anger expression—the outward expression of anger or the inward experience of anger—is the most "toxic" as far as CHD is concerned? Are chronic irritability and impatience risk factors for CHD? Do men and women differ in the way they cope with anger and in the modes of anger expression that put them at risk for CHD? What are the physiological and hormonal processes by means of which negative emotions become translated into CHD? And finally, is it possible to modify the manner in which we express anger so as to reduce the risk of CHD?

To answer these and other questions, we draw on a number of studies and research projects, especially on research conducted at the Army Physical Fitness Research Institute, located at Carlisle Barracks, Pennsylvania; and the Normative Aging Study (NAS), a major prospective investigation sponsored by the Veterans Administration, whose participants are male veterans of the U.S. armed forces.[1]

CORRELATIONS BETWEEN NEGATIVE EMOTIONS AND CHD

Type A and CHD . In the lay community the Type A construct is still the most widely recognized psychological risk factor for CHD, although in the scientific community Type A no longer enjoys the reputation it once did as a CHD risk factor, on par with others such as smoking and high cholesterol levels.

Ray Rosenman, who together with Meyer Friedman first identified the Type A behavior pattern as a risk factor for CHD, defines Type A behavior as follows:

[It is] an action-emotion complex that individuals use to confront the environmental milieus and challenges. The complex involves behavioral dispositions such as aggressiveness, competitiveness, and impatience; specific behaviors such as muscle tenseness, alertness, rapid and intense vocal stylistics, and accelerated pace of activities, and emotional responses such as irritation, covert hostility, and above average potential for anger.[2]

This rather complex definition of Type A behavior can be reduced to three major components: (1) excessive competitiveness, (2) a time-pressured life-style, and (3) anger/hostility/aggression.

Friedman and Rosenman also developed a structured interview for assessing the Type A behavior pattern and in 1975 proceeded to launch a large-scale prospective inquiry, the Western Collaborative Group Study (WCGS), in which 3,154 middle-aged, middle class men, free of CHD at the time of entry into the study, were administered the Type A structured interview. In an 8.5-year follow-up, more than twice as many type As than type Bs had developed various forms of CHD. Despite this and other initial confirmations of the Type A-CHD link, several subsequent studies, including a large-scale prospective study (the Multiple Risk Factors Intervention Trials, or MRFIT) failed to confirm this relationship.[3] Even though Type A behavior, in its fully inclusive sense, is at best only a weak risk factor for CHD, several of its components have emerged in recent research as potent risk factors for CHD.

Anger and CHD. The failure of the Type A construct to live up to the high expectations generated by Friedman and Rosenman led researchers to focus instead on anger and hostility. Perhaps the strongest support for the hypothesized anger-CHD link comes from the Mittleman study in 1995 in which it was found that the risk for a heart attack in the 2 hours

following an episode of intense outwardly expressed anger is 230% greater than when there is no such anger experience[4].

Impressive support for the anger-CHD link also comes from the NAS findings[5]. In 1986, 1,225 male veterans free of CHD received the MMPI-2, a self-administered personality test from which we constructed an anger-questionnaire (Appendix 1). At the end of an 8-year follow-up, there were 161 cases with heart-related ailments, including 70 cases of nonfatal myocardial infarction (MI), 31 cases of fatal CHD, and 58 cases of heart-related chest pains (angina pectoris, or AP). There was a significant relationship between the veterans' scores on the anger questionnaire and total CHD (combined fatal CHD and nonfatal MIs), and between their anger scores and angina. The risk of CHD for men scoring in the upper third on the anger questionnaire was more than three times that for men scoring in the lower third. The risk for AP in the high-anger group was more than twice that in the low-anger group. These findings provide strong support for the hypothesis that anger is a significant risk factor for CHD. In fact, in the NAS, the risk for CHD conferred by anger was greater than that conferred by smoking or cholesterol.

Anger-out, Anger-in, and CHD. There are two modes of anger expression—outward expression (anger-out) and inward feeling (anger-in). Anger-out entails verbal and physical behaviors, such as shouting, fist-shaking, and facial contortions. Anger-in does not show on the outside, but is experienced solely on the inside through feelings and thoughts. It has been widely assumed that of the two modes, anger-in is the more damaging to one's heart. In fact, some mental health professionals, fearing the supposed toxic effects of repressed anger, have advocated the periodic, full-blown outward expression of anger, on the assumption that such venting of pent-up anger is therapeutic, purging the person of destructive angry impulses. This notion of catharsis was at the root of the "encounter" movement, popular in the Fifties and Sixties.

Yet the research evidence points to a very different conclusion. The anger questionnaire used in the NAS is loaded with markers focusing on the full-blown outward expression of anger (Appendix 1), both verbal and physical, and it is this scale that correlated closely with evidence of CHD. The reader may wonder, "Couldn't both anger-out and anger-in be significant risk factors for CHD?" To answer this question, we need to turn to a study in which men and women referred for a thallium stress test were rated by their spouses on various anger dimensions by means of C. D. Spielberger's State-Trait Anger Expression Inventory, or STAXI. A factor analysis of these anger ratings yielded an impulsive anger-out factor and an anger-in factor. Only patients' anger-out scores, not their anger-in scores, correlated significantly and positively with documented CHD as determined by the thallium stress test findings and by their medical histories.[6] However, as we shall see later, the total repression of anger is also a risk factor for CHD, but apparently not as much as the full-blown outward expression of anger.

With regard to anger expression, it is also frequently assumed that there are major gender differences, with men tending to express anger-outwardly and women tending to experience anger-inwardly. Our findings indicate that if such was the case in the past, it is less true today. Women now also express their anger-outwardly, except that they may do so more subtly and more indirectly than men. After all, there is a price to be paid for the outward expression of anger, and women may have reason to be more sensitive to these social consequences than men.

The Bridge that Links Anger-out and CHD. To understand why anger-out is such a strong risk factor for CHD, and anger-in is not, we need to understand the nature of emotions. Emotions consist not only of thoughts and feelings, but also have physiological, hormonal, and neurohormonal manifestations. These physiological, hormonal, and neurohormonal manifestations of emotions constitute the bridge that links negative emotions with disease processes. Furthermore, each of the negative emotions seems to be associated with a unique pattern of physiological, hormonal, and neurohormonal changes, which in turn are associated with a specific disease process. Thus, anger is uniquely associated with exceedingly high levels of both systolic (the upper number) *and* diastolic (the lower number) blood pressure reactivity. Such hyperreactivity damages the coronary arteries, and can result in transient deficiencies of blood supply to the heart (ischemia), and ultimately in a heart attack (MI). But not all types of anger experience produce such high levels of cardiovascular reactivity.

A series of studies conducted by Aron W. Siegman and S. Cappel-Snow investigated the effects of different types of anger experience on cardiovascular reactivity.[7] Included in this comparison were discussion by the subject in a loud and angry voice of previously experienced anger-arousing events; discussion in a normal voice of previously experienced anger-arousing events; discussion in a soft and slow manner of previously experienced anger-arousing events;

and the inward silent reliving of previously experienced anger-arousing events. Only the full-blown outward expression of anger, i.e., talking about the anger-arousing events loudly and quickly, was associated with exceedingly high increases in blood pressure (Fig. 1). In a few individuals systolic blood pressure increased by as much as 100 mm Hg, and diastolic by as much as 50 mm Hg. The mean increase in blood pressure was about 25-30 mm Hg. Given these findings, one can readily appreciate why frequent, full-blown outbursts of anger in individuals who are "hot" reactors (i.e., who experience blood pressure increases to exceedingly high levels in response to anger arousal) will eventually result in serious heart

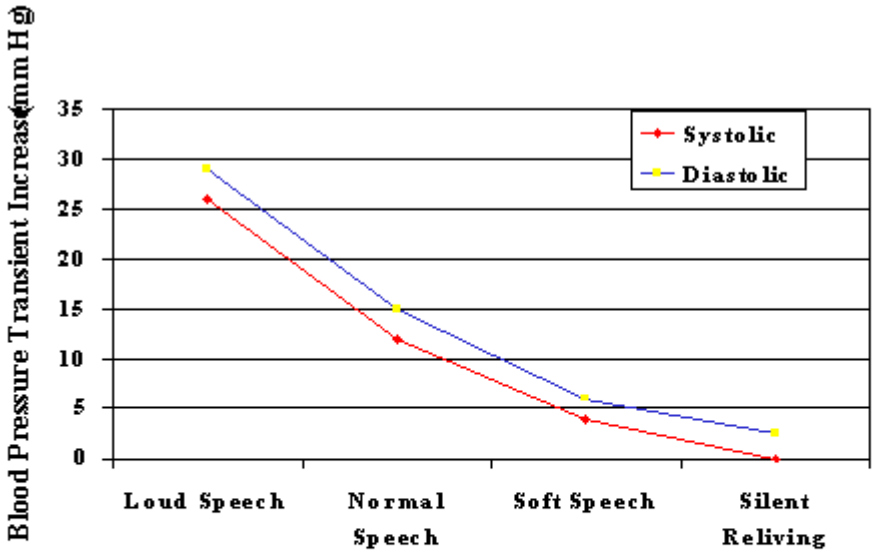

Figure 1. Blood Pressure Reactivity as a Function of Four Anger Conditions

disease.

Why does loud, angry speech produce such high BP elevations? The answer is that loud speech and blood pressure interact in a reciprocal fashion: as loudness goes up so does blood pressure, and as blood pressure goes up so does loudness. This creates a vicious circle (Fig. 2) which accounts for the high BP levels and for the escalating nature of anger: annoyance turns into anger, and anger turns into rage.

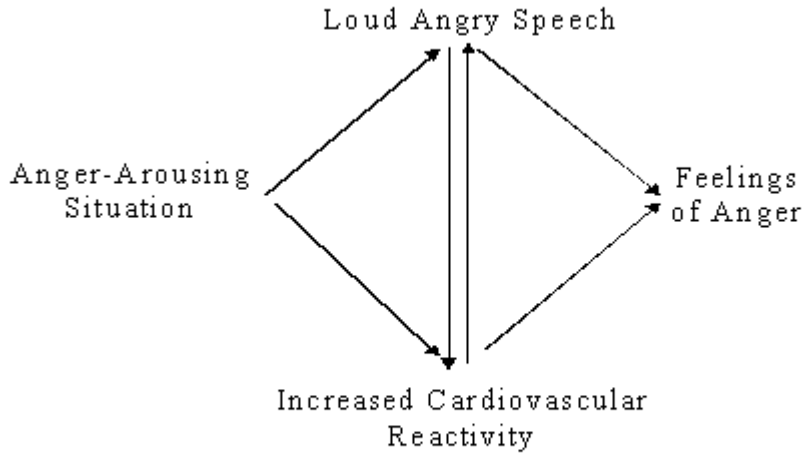

Figure. 2. Schematic Representation of the Reciprocal Interactions of Anger, Expressive Vocal Behavior and Cardiovascular Reactivity.

The finding that the discussion of anger-arousing experiences in a normal, pleasant voice is not associated with exceptionally high levels of cardiovascular reactivity (CVR) has important implications for the prevention of the negative health consequences of anger arousal. Especially intriguing, from a preventive medicine point-of-view, are the findings that discussion of anger-arousing events in a soft and slow speech style is associated with near zero increases in CVR. This approach and other ways of reducing the negative consequences of anger arousal will be presented later in this chapter.

Anger and Hypercholesterolemia. Current research is beginning to move away from an exclusive focus on the role of heightened cardiovascular reactivity as the mediator of the anger-CHD relationship. Other factors are properly receiving attention, such as the potential role of cholesterol. Researchers at the Army Physical Fitness Research Institute of the U.S. Army War College have pioneered in studying the relationship between anger, on the one hand, and lipid and glucose levels, on the other, in healthy men and women. An analysis of data collected on 103 women—officers and civilian students at the Army War College—showed that an angry temperament, poor anger control, and the full-blown outward expression of anger are associated with heightened total cholesterol and heightened low-density lipoprotein (LDL) levels (LDL being the so-called bad cholesterol). Angry temperament and poor anger control were also associated with heightened fasting glucose levels. Further analyses revealed that these positive relationships between anger-out and a negative lipoprotein profile and heightened glucose levels occurred only in women whose physical fitness ranged from poor to normal, not in women whose physical fitness was excellent. Excellent physical fitness neutralized the negative impact of an angry temperament and poor anger control on lipid, lipoprotein, and glucose levels.

Unlike anger-out, the mere inward experience of anger, or anger-in, did not produce increases in cholesterol or glucose levels. In fact, in our sample of female subjects, the correlations between the Spielberger anger-in scores and triglyceride/cholesterol levels were consistently negative and occasionally significantly so. Our finding that in women only anger-out, but not anger-in, is associated with a bad lipid profile, has been confirmed in a recent study by E. C. Suarez and associates. [8]

So far, the discussion has focused on the relationship between anger expression and cholesterol levels in women. What about this relationship in men? A study conducted at the U.S. Army War College of senior male Army officers yielded findings similar to those reported earlier for women: (1) a positive relationship between anger-out, total cholesterol, and LDL; (2) a significant negative relationship between anger-in and triglycerides; and (3) an increasing magnitude in the relationship between anger-out and a negative lipid profile as additional risk factors were included.[9] However, subsequent studies at the War College failed to confirm these early findings as far as the men are concerned.

Interestingly, a study conducted in Germany in 1995 compared the relationship of two types of anger expression, namely, anger-out and an assertive but non-angry and non-provocative discussion of one's angry feelings called "anger-discuss," and participants' lipid profiles. Anger-out was associated with a negative lipid and lipoprotein profile (higher cholesterol and triglyceride levels), but the anger-discuss had no such negative consequences. In fact, anger-discuss was associated with a favorable lipid profile. There were no gender differences in regard to these findings.[10] Similarly, a study in 1991 found that the outward expression of anger was related to heightened levels of total serum cholesterol and LDL in both men and women. [11]

How are we to explain the discrepancy between the recent lack of findings obtained with our senior male Army officers and the positive findings obtained in studies based upon subjects recruited from the population at large? It must be remembered that our senior Army officers are a select group of individuals who have achieved high rank in the U.S. Army because of their leadership qualities. Moreover, they are exceptionally physically fit individuals, with relatively few in the high-risk category levels. The restricted range of their cholesterol scores, which were relatively low, may be responsible for our failure to find the expected positive correlations between our anger measures and their cholesterol levels. Perhaps more importantly, our findings suggest that a high level of physical fitness in men, as was found in women, neutralizes the expected positive relationship between anger-out and a negative lipid profile.

To summarize this section: (1) the weight of evidence suggests that anger-out is associated not only with cardiovascular hyperreactivity, but also with a negative lipid profile; and (2) the evidence also suggests that discussion of one's angry feelings in a non-provocative, non-angry manner is associated with a favorable lipid profile. For some time now, psychotherapists have maintained that an assertive, yet non-provocative discussion of one's angry feelings is the proper alternative to anger-out, or to its massive repression. The emerging evidence indicates that such socially assertive anger coping (anger-discuss) is indeed the preferred mode of dealing with anger from both a mental health and physical health perspective.

Impatience-Irritability, Repression, and CHD. The full-blown outward expression of anger is clearly a significant risk factor for CHD, but it is by no means the only mode of anger-out that is a strong risk factor. Recent findings show that impatience-irritability (Appendix 2)—a highly attenuated form of anger-out expression—is no less of a risk factor for CHD than the full-blown outward expression of anger. We suggest that in addition to the role of exaggerated cardiovascular reactivity in CHD, we need to consider the frequency or chronicity of cardiovascular arousal. Impatience-irritability is not a rare event. In people so inclined, impatience-irritability tends to be a chronic condition. Even if occasional moderate cardiovascular arousal is not a significant risk factor for CHD, chronic arousal may very well be a quite significant CHD risk factor.

Finally, there is evidence that in addition to anger-out, its polar opposite, namely, the total *repression* of anger, is also a risk

factor for CHD. The difference between anger *repressors* and anger *suppressors* is that the latter are aware of their angry feelings and the former are not. Repressors will tell you that they rarely, if ever, experience feelings of anger. The repressors themselves truly believe that they are not angry people, although it is apparent to everyone else that they are. Such massive denial comes at a price: it raises blood pressure and ultimately damages the heart, but probably less than the full-blown outward expression of anger.[12] Figure 3 is a schematic representation of the various forms of anger expression and their relation to CHD.

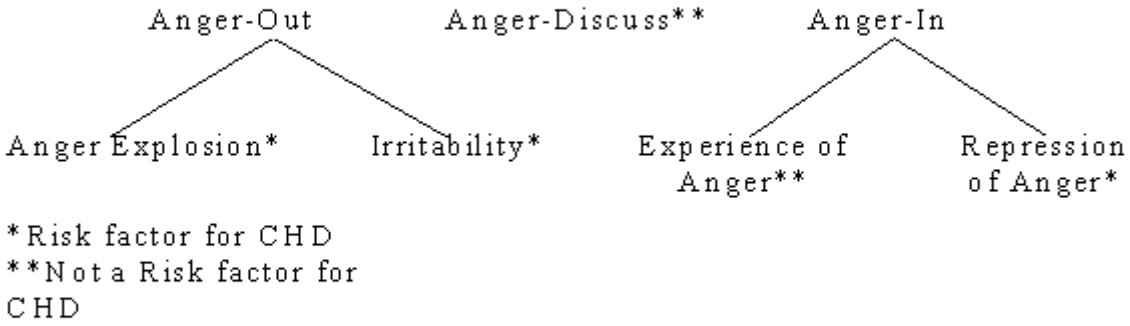

Figure 3. Types of Anger Expression and Their Relation to CHD

The challenge facing mankind at the dawn of the new millennium is to strike a balance between over-control and under-control of anger. The negative social and health consequences of under-control are obvious and well-documented. However, over-control too has negative health and social consequences. Earlier we referred to the link between total repression of anger and CHD, and there is evidence that highly over-controlled individuals can be at risk for committing homicide.[13] Perhaps the permissiveness or under-control of recent times is a reaction against the over-control of earlier times. Clearly, we need to develop social institutions and child-rearing strategies that control anger without imposing over-control.

Other Negative Emotions Associated with CHD. Thus far our discussion has focused on the link between anger and CHD because, as pointed out in the introduction, this link has received the most sustained research attention and consequently is the best understood in the field of behavioral medicine. However, other negative emotions also confer risk for CHD, and we now turn our attention to these relationships, albeit briefly.

Results from the Normative Aging Study indicate that anxiety too is a risk factor for CHD.[14] In the NAS, physiological manifestations of anxiety were associated with fatal CHD, nonfatal heart attacks, and angina. Cognitive manifestations of anxiety were a significant risk factor for nonfatal heart attacks and angina but not for fatal CHD. Low self-esteem was a significant risk factor only for angina. See Appendix 3 for sample measures of these conditions. These findings suggest that different manifestations of anxiety are associated with different manifestations of CHD.

Depression too plays a role in CHD.[15] Many of the depression-CHD studies are retrospective and correlational, and therefore do not reveal whether depression is a cause or merely a consequence of CHD. Moreover, in the NAS, depression was a significant risk factor for angina pectoris, but not for more serious CHD outcomes, such as MI and death.[16] There is strong evidence, however, that depression predicts recurrent CHD events, i.e., CHD events after an initial MI. Most notable in this regard is a prospective study that found a five-fold greater risk of mortality among depressed, post-MI patients than among their non-depressed counterparts.[17] It would seem, then, that not only anger, but anxiety and depression too play a role in CHD.

In addition to the negative emotions like anger, anxiety, and depression, there are also some personality traits and behavior patterns that can put one at risk for CHD. For example, in the NAS the need to dominate and control others, as measured by an MMPI-2 derived Dominance Questionnaire (Appendix 4), was a significant risk factor for CHD.[18] High dominance

scorers (upper third of the Dominance Questionnaire) were more than twice as much at risk for CHD than low scorers (lower third), independent of their anger levels. In fact, dominance was a better predictor of fatal CHD than impulse anger. The high dominance scorers described themselves as competitive, assertive, argumentative, aggressive, defensive of their rights, and desirous of leadership roles. A behavioral manifestation of dominance is the tendency, during a conversation, to hold on to the floor, or to grab the floor from one's conversational partner or interviewer. Using a variety of speech markers of this tendency (e.g. frequent interruptions), Siegman and associates found that dominance is related to the severity of coronary occlusion and the occurrence of ischemic events in patients referred for angiographic and thallium stress studies.[19] This relationship was clearly evident in men, but not in women.

Of interest in this context are the findings by Kaplan and associates, who worked with cynomolgous monkeys (macaques). They found that dominant monkeys, who lived in an environment where their alpha status was frequently challenged, were at an increased risk for coronary occlusions compared to non-dominant controls. Furthermore, they found that heightened cardiovascular reactivity is what mediates the dominance-CHD link. [20]

According to some theorists, power assertion or dominance is one of two fundamental characteristics of all social animals (the other being the need for nurture), and it is not to be viewed as an intrinsically negative trait which is bad for one's health. Only if dominance needs put a person in constant competition with his fellow man, and cause him to behave aggressively, does dominance become a negative force and a risk factor for CHD.

THE MODIFICATION OF ANGER AND CHD RISK

Given the well documented role of anger expression in the development of coronary artery disease, the goal of preventing CHD leads us to two related questions: Can individuals modify their angry behavior in beneficial ways? And if so, what techniques are effective and realistically efficient in doing so?

Can People Change Their Harmful Angry Behavior? In 1975, R. W. Novaco became one of the first researchers to demonstrate the effective treatment of chronic anger problems using interventions that target mental (cognitive), physiological, and behavioral aspects of anger. Using techniques that had initially been developed to deal with anxiety disorders, he applied "stress inoculation training" to the treatment of anger problems.[21] This approach assumes that at a cognitive level, anger is a result of a person's perceptions, attributions, expectations, and self-talk. Reduction of physiological arousal through relaxation strategies and the development of more effective behaviors, including enhanced communication, assertiveness, and problem-solving skills, complete the intervention program.

Novaco's original research suggested that while both the relaxation and cognitive components of the stress inoculation model were effective, the cognitive interventions appeared more robust. Subsequent work by D. Miechenbaum has also focused on the cognitive and behavioral elements of anger, emphasizing behavioral rehearsal of anger-provoking situations.[22] Additionally, R.M. Suinn developed an eight-session relaxation therapy for anxiety and anger problems.[23] A recent review of the intervention literature for anger commended several approaches as effective: self-instructional training, relaxation-based management strategies (such as progressive muscle relaxation, anger management drills, and systematic desensitization), and social skills training. Multi-component treatment packages, which included cognitive components, emerged as most effective. Notably, techniques based on catharsis were found not effective in reducing anger.[24]

J. L. Deffenbacher has comprehensively reviewed the literature on therapeutic intervention with anger problems and suggested that an ideal treatment package for adults with anger disorders can be defined. His admittedly broad approach covers the following aspects: self-monitoring and enhanced awareness; anger response disruption; self-calming strategies (including speaking in a low voice); relaxation coping skills; cognitive restructuring; silly humor; and skill building.[25] Thus there is broad evidence that individuals can learn to modify their angry behavior using a comprehensive cognitive behavioral approach.

The Most Effective and Efficient Techniques in the Prevention of CHD. The Army Physical Fitness Research Institute (APFRI) has provided intervention programs to assist senior officers in changing dysfunctional aspects of Type A behavior patterns beginning in the early 1980s. Initially, the program was conducted by Meyer Friedman and his colleagues based on the assessment and intervention techniques described in the Recurrent Coronary Prevention Project Study (1982). These early studies of the modification of Type A behavior used intervention models that focused on time urgency and competitiveness in addition to hostility and anger.[26] Consonant with current thinking, the Type A Behavior Modification Program was redesigned, based on recent research that clearly confirmed that anger and hostility rather than the global Type A pattern better characterizes the risk factors for CHD.

The current program utilizes the LifeSkills program developed by Redford and Virginia Williams. The LifeSkills program is a

six-session small-group workshop based on techniques described in the Williams' book *Anger Kills: Seventeen Strategies for Controlling the Hostility That Can Harm Your Health* (1993) and expanded upon in *LifeSkills.*[27] Because both books are written in a very personal and easy-to-read-style, participants found the techniques quite effective.

The LifeSkills program deals with all of the aspects that Deffenbacher describes in his ideal treatment package, but presents them in a less technical form. A major goal of APFRI's research is to discover useful, implementable health promotion programs. The Williams' LifeSkills program offered a unique opportunity to study an intervention program that was promising in these regards, and additionally was of relatively brief duration.

APFRI's LifeSkills-Anger Kills Intervention Program. The goals of the program focus on managing anger and other negative emotions effectively through mastery of two general sets of LifeSkills—understanding others and ourselves, and acting effectively. The program consists of six 90-minute small-group sessions. The facilitator opens by checking with the group regarding the success and progress of home practice of the skills introduced during the previous session. This is followed by explanation of a new skill and the rationale for its use. The facilitator then models the use of the skill, following this step with a structured exercise in which the participants practice this skill with a partner in the group. Participants are then asked to practice the skill in a "real life" situation during the week, often with family members, and then record their responses and reactions in order to report back to the group during the following session.

Participants are asked to use a Thoughts and Feelings Log in which they record actual life situations that provoke their anger and irritability during the week. At first, they are asked simply to describe the scene (who, what, when, where) and then record their thoughts, feelings, and behavioral reactions, followed by noting the consequences of their reactions. Later, participants evaluate these log entries by use of a series of questions that address their cognitive appraisal of the situation, using the mnemonic "I AM WORTH IT": I (Is the situation IMPORTANT to me?); A (Is my response APPROPRIATE to the facts of the situation?); M (Is the situation MODIFIABLE in ways that will reduce my negative thoughts and feelings?); Worth It (When I balance the needs of others and myself, is taking action worth it?). This approach leads to introduction and use of cognitive restructuring techniques and problem-solving strategies.

Anger response disruption is achieved through "thought stopping" (saying the word "stop" out loud when the person begins to experience the same angry thoughts over and over) and a number of distraction strategies to shift ones' attention off the anger-inducing episode. Relaxation coping skills are taught during the sessions, and three different relaxation/meditation techniques are introduced and then practiced at home using audiotapes. These sessions encourage laughing at oneself, while also honing and building skills related to clear and effective communication, assertiveness, and empathic listening.

Program Effectiveness. During Academic Years 1998 and 1999 the effectiveness of the LifeSkills intervention program was studied, using male subjects. Data were analyzed from 33 predominantly uniformed military leaders who completed the program and 23 senior military officers who were used as a control group. The group of 33 had responded to an invitation to participate in a six-session anger management program based on the LifeSkills Program of Redford and Virginia Williams because they were identified as being at high risk for cardiac—related health problems based on their scores on the Spielberger State-Trait Anger Expressio Inventory (STAXI). The AX/EX summary score of the STAXI was used to select the highest 20% (i.e. those at highest risk) of the 250 students who took the test as part of a larger ongoing study of cardiac health and fitness. In addition, students who scored at the 90th percentile on any one of the three subscales of anger-out, anger-in, or low anger control were also included. Following the six-session intervention program (approximately 3 months later), they were again administered the STAXI and these scores compared to their pre-intervention scores. As may be seen in Figure 4, participants' anger-in, anger-out, and AX/EX summary scores were significantly lower following the intervention and their anger control score significantly increased.

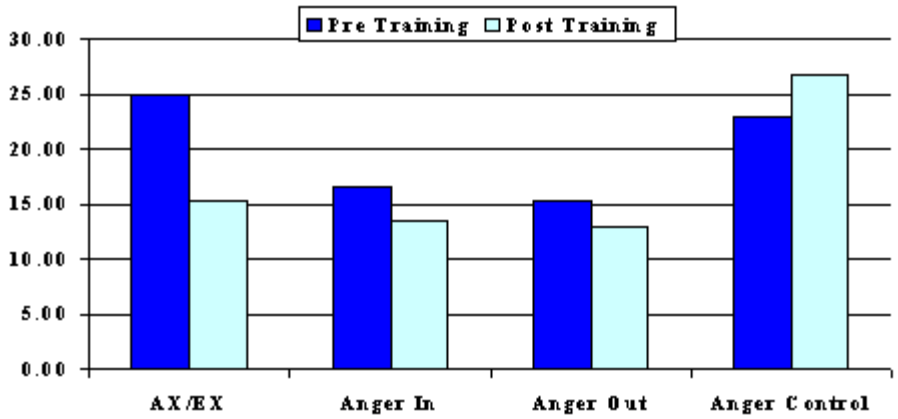

Fig. 4. Effects of Life Skills Training On Anger Expression Scores in Senior Military Leaders

Because the year-long program at the Army War College differs significantly from regular military assignments, it was necessary to determine whether simply being enrolled at the War College (where presumably a more relaxed climate prevails) might have had a positive effect on stress and anger levels. A control group was formed, made up of a random sample of students who did not score high on the STAXI initially. Thirty-one students were sent a follow up STAXI at the same time that study enrollees were completing the intervention program. Twenty-six completed STAXIs were returned (return rate of 84%) from this group, including those from three women. Since the intervention group was all male, the women were excluded from the sample, leaving a control group of 23 students. The control group did not show any significant change over the same 3-month period of time on any of the anger dimensions, thus ruling out the possibility that the drop in anger levels of the test group resulted from the additional 3-month exposure to the presumably less stressful environment of the War College.

Thus these data support the conclusion that individuals who have high levels of anger and low levels of anger control can be effectively trained to reduce their expressions of anger and increase their anger control to the "normal" levels of their peers. Written comments and feedback from program participants also noted a beneficial effect on their experience of stress, as well as a reduction in stress and conflict in their interpersonal relationships both at home and work.

Summary and Recommendations. We can conclude that effective psycho-educational programs exist for the modification of anger and hostility. These interventions additionally produce a beneficial effect on the cardiovascular health of senior military officers, as well as a profound positive impact on their personal and family relationships.

However, one of the most compelling conclusions is that encouraging the outward expression of anger (catharsis) is not effective and, in fact, is probably contraindicated. Instead, the growing body of research clearly suggests that a broad-based, cognitive, behavioral, skill-building approach works best in helping individuals modify their behavior.

Improving Organizational Mental Health

We have seen that convincing connections exist between emotional health and physical health outcomes, and that effective programs are available for reducing toxic feelings such as anger and promoting positive strategies for coping with stress. What actions do these findings imply for senior organizational leaders?

The concept of preventive stress management as it relates to the mental health of workers has been an integral part of industrial psychology since the early part of the 20th century.[28] The two key tenets of preventive stress management are (1) that individual and organizational health are interdependent; and (2) that leaders have a responsibility for individual and organizational health.[29] Today the collected research findings and wisdom from the fields of public health, behavioral medicine, management science, and social and clinical psychology continue to make clear that organizational productivity and morale are dependent on leaders who can help minimize the distress and strain experienced by the individual

subordinate within his total environment—the workplace as well as the outside world, including the subordinate's family.[30] We briefly discuss below how executive leaders can begin to take charge of their organization's mental health.

- **Become a Mental Fitness Role Model.** Just as it's important to exemplify good physical health and fitness habits if you expect subordinates to practice them, the same is true for good mental health behaviors. You can hardly demand that your staff members control their anger and handle their frustrations productively if you haven't learned to do so yourself. Also, in order to be a credible advocate for mental health resources both within and outside your organization, it greatly helps if you've taken advantage of and can personally speak about the benefits of such resources.

Whether it means becoming a better manager of our time, stress, anger, anxiety, or depression, we all have some psychological area in which we could stand improvement, just as we have with regard to our physical selves. Finding the right area to focus on necessitates a critical self-examination, either on one's own or with the help of others. Of course, if your organization offers opportunities for such personal reflection and assessment, by all means utilize them. The leaders at the Army War College, for example, are fortunate to have both screening tools and follow-up programs designed for mental health promotion. If your organization doesn't have such programs in-house, check out community, university, or church-related courses and seminars in stress and anger management. You may also wish to talk to a mental health professional such as a psychologist or social worker to find the program that best fits your needs, just as you would discuss the most appropriate exercise program with your personal fitness trainer.

- **Take Responsibility for Your Subordinates' Mental Health** . Once your own emotional house is in order, you can more effectively address the emotional health of your subordinate leaders and those they lead. Unfortunately, too many leaders are prone to diagnose subordinates' emotional problems and refer them for help (if they do not simply fire or transfer them) without considering their own role in creating and perpetuating the problems .

You should do everything in your power to make certain that resources and programs are in place in your organization or available locally to help the worker whose anger has led to workplace eruptions and family abuse or whose depression has led to drinking, financial, or eating problems. Many staff members could also benefit from your recommendation to attend a stress management course even if symptoms of stress still lie beneath the surface. In addition, however, smart executives will not fail to review their own role in producing stressors in their organizations.

A change in leadership style is often necessary for reducing subordinate stress. The situation may call for a leaderly approach that is more emotionally supportive rather than a no-nonsense task orientation. Or possibly the reverse will be true. Likewise, a staff member's skills and expertise may flourish better when interacting with a laissez-faire leader instead of one who micromanages. Difficulties emerge because leaders, personality-wise, naturally tend to vary in the degree of supervision they exert, their manner of expressing anger control, and the degree of trust they display. The wrong style with the wrong staff members invariably produces stress, which tends to grow more destructive and breed resentment over time.

Although ideally you can achieve a balance of leadership styles that properly suits your staff and its changing situations without losing sight of the bottom line (be it mission or profits), achieving an ideal balance is obviously easier said than done. At a minimum, however, you must read what is going on in the minds of your followers to know if change is needed on your part. Are they angry, bitter, depressed? If so, why? As you move up the ladder, you may find that such feelings become increasingly difficult to detect, both among personal staff members and in subordinate units of your organization. Surface fixes, like throwing office parties or having casual dress days, may only help to address stress symptoms instead of getting to the root of the problem.

Periodic sensing sessions (whether on or off site) which allow staff workers to openly let off steam or speak their minds can be helpful, but many important thoughts and feelings may go unexpressed in such sessions. When trust and communication have deteriorated too far, these sessions may be useless. Similarly, an open door/e-mail policy or the more anonymous suggestion box can provide clues to stress levels in the organization, but these may be unrepresentative of the whole. Better indicators and insight can come from a morale survey, provided, of course, that it is filled out honestly.

If you think that potential complainers fear being ferreted out and made to pay a price, you should call in an organizational consulting or survey agency to do the work. Keep in mind, though, that even outsiders may be distrusted, especially when their methods involve group or individual interviews. On the other hand, if subordinates truly believe that you care about the stress they are experiencing and want to do what you can to alleviate it, they will be grateful for the opportunity to express themselves (which helps relieve some stress in itself). In any case, always report back on the actions you have taken based on such feedback in order to encourage future candid submissions and recommendations.

- **Work to Change the Organizational Culture and Buffer the Environment within the**

Limits of Your Power.

It is important for your subordinates to understand what things you can and cannot control in the workplace. Whether it involves working conditions, pay, benefits, quotas, time off, deadlines, or quality control standards, some factors that influence worker morale and mental health lie outside your direct ability to change. The good news is that your subordinates don't expect you to exercise godlike powers to magically create the perfect work environment. However, they do expect and appreciate knowing why things are the way they are and what the possibilities may be for change in the future. Be honest about whatever the problem or hang-up might be—market conditions, competition, senior staff politics, laws, or regulations––since you'll have a potentially far worse situation if and when a "cover-up" is discovered. For example, a loss of organizational trust is practically inevitable if employees are told that there will be no Christmas bonuses due to budget cuts and profit squeezes, only later to learn about increases in senior executive pay packages.

Most importantly, subordinates need to know that you'll go to bat for them in making sure their interests get a fair hearing. They might understand that senior pay packages need to be increased to attract top talent for a revitalization of the organization, but they'll feel better about you if they know that you've stood up and voiced their concern that Christmas bonuses are a critical component of their budgets and that some compromise, perhaps stock options or a reasonable one-time reduction, is preferable to outright elimination. It clearly takes courage to stand up to threatening forces from without. While it is obviously not advisable to fall on your sword on a regular basis, carefully choosing battles that will demonstrate that you are not *solely* motivated by your own career advancement will pay handsome dividends in trust, confidence, loyalty, and respect. Never be afraid to say, "I don't know" or "I've done all I can" or even "I made a mistake." Remember that your subordinates don't expect you to be superhuman, just considerate enough of them to tell it like it is. This does not mean that you should alert them to every possible environmental threat and fill them in on the details of senior staff gossip. Part of your job is acting as a buffer against things that would needlessly concern workers and which you can handle efficiently at your level.

Times of great organizational change due to new programs and policies, downsizing, or shifts in culture pose special leadership challenges. The ability to guide your organization through new ways of doing business that might be at serious odds with entrenched routines demands wisdom and perseverance, but may often be the key to long-term organizational survival and success. Racial integration and equal opportunity are generally considered relative success stories in the U.S. Army, but they were accomplished only through unsung leaders daily modeling and enforcing new standards of behavior. The Army, like the rest of government and corporate America, still has a ways to go in improving gender equality and reducing the incidence of sexual harassment. Again, achieving the latter will ultimately occur only if each individual leader stops tolerating unacceptable behavior in his or her organizational sector. The very best leaders, by the way, are not those who successfully carry out a difficult, but critically essential policy change, but rather those who have the vision and concern for organizational health to voice a need for the change in the first place.

A final note relates to the necessity for leaders who seek to optimize the mental health and productivity of their followers to take into account the interface of work and family. With both parents working in most families, it is a greater challenge than in the past to juggle and balance work and home life. Since job productivity, motivation, and the ability to concentrate are very much tied to how things are going at home, the leader who is also the preventive stress manager will take steps to ensure that the organization has done all that it can to accommodate and support family needs. These steps may include reviewing flextime, work-at-home and family leave policies, child and elder day opportunities, health insurance benefits, and counseling or other support mechanisms. As the military has discovered, these support systems are especially crucial when subordinates are separated from their families for significant periods of time. It takes a leader with insightful skills, not merely empathy, to factor in the need to take care of families without compromising the organizational mission.

Why bother spending time and money on mental health concerns? For the same preventive health reasons that lead you to encourage your workforce to get flu shots, stop smoking, exercise regularly, have annual medical checkups, drive safely, drink only in moderation, eat right, and lose excess weight. Not only do you care about their mental health and fitness as fellow human beings, but you understand that absenteeism, low productivity, and poor performance are just as likely to result from a mental as from a physical ailment. In fact, doctors often find that emotional stress problems underlie physical symptoms. Without that ounce of prevention on the psychological front, we should not be surprised by the often violent results of unchecked anger and depression in the workplace.

In a tight labor market with low unemployment, leaders can hardly afford to burn out workers, especially their best performers. Sadly, many executives do not learn this lesson until it's too late. The emotional health and morale of an organization require the joint efforts of both subordinates and leaders. Keeping a challenged organization from sliding into a distressed one may well be the hallmark of a truly great leader.

Concluding Thoughts

Earlier this century it was said that ours was the Age of Anxiety. Given the Holocaust and the ethnic hatreds and "cleansings" that have occurred in Africa and Europe towards the close of the last century, our new century is probably best characterized as the Age of Anger. Perhaps the most important task facing mankind as it enters the 2000s is to cope successfully with our individual anger and hostility.

It needs to be emphasized that the goal of the various anger control strategies that have been developed by psychologists is precisely that, the *control* of anger, not its elimination. If anger is an evolved biological response to pain, frustration, and situations that present a threat to one's existence, then it is unlikely that anger can or should ever be completely eliminated. Provocations, frustrations, pain, and illness are part of the human condition. The purpose of anger-intervention strategies is to *control* anger so that we do not become consumed by it, to free up energies so that we can lead more productive, more creative, and more socially useful lives. Moreover, it is not at all clear that the total elimination of anger is a desirable goal, even if such total elimination could be achieved. Some measure of controlled anger can be a good thing if it motivates us to fight evil and injustice.

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Appendix 1. Sample MMPI-2 Anger Markers

1. At times I feel like swearing.
2. At times I feel like smashing things.
3. I have very few quarrels with members of my family.
4. Sometimes when I am not feeling well I am irritable.
5. Often I can't understand why I have been so irritable and grouchy.
6. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.
7. I get mad easily and then get over it soon.
8. I easily become impatient with people.
9. I am not easily angered.
10. I get angry when my friends or family give me advice on how to live my life.
11. I am often said to be hotheaded.
12. I am often sorry because I am so irritable and grouchy.

13. I often become very irritable when people interrupt my work.
14. Sometimes I get so angry and upset I don't know what comes over me.
15. I have become so angry with someone that I have felt as if I would explode.
16. I almost never lose self-control.

Appendix 2. MMPI-2 Factor Analytically Derived Impatience-Irritability Scale

1. Sometimes when I'm not feeling well I am irritable.

2. Often I can't understand why I have been so irritable and grouchy.

3. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.

4. I resent having anyone trick me so cleverly that I have to admit I was fooled.

5. I easily become impatient with people.

6. I get angry when my friends or family give me advice on how to live my life.

7. It makes me angry to have people hurry me.

8. I often become very irritable when people interrupt my work.

9. At movies, restaurants, or sporting events, I hate to have to stand in line.

10. I get very irritable when people I depend on don't get their work done in time.

Appendix 3. Sample Markers for Physiological Anxiety, Cognitive Anxiety, and Low Self-Esteem.

<u>Physiological Anxiety</u>

1. My hands and feet are usually cold.

2. My sleep is fitful and disturbed.

3. I tire quickly

4. Sometimes, when embarrassed, I break out in a sweat, which annoys me greatly.

5. I frequently notice my heart pounding and am frequently short of breath.

<u>Cognitive Anxiety</u>

1. I frequently find myself worrying about something.

2. I worry over money and business.

3. I cannot keep my mind on one thing.

4. I have sometimes felt that difficulties were piling so high that I could not overcome them.

5. I worry quite a bit over possible misfortunes.

Low Self-Esteem

1. I am certainly lacking in self-esteem.

2. I certainly feel useless at times.

3. I am entirely lacking in confidence.

4. I am easily embarrassed.

5. I shrink from facing a crisis or difficulty.

Appendix 4. MMPI-2 Factor Analytically Derived Dominance Scale

1. When people do me a wrong, I feel I should pay them back if I can, just for the principle of the thing.
2. I frequently find it necessary to stand up for what I think is right.
3. I have at time stood in the way of people who were trying to do something, not because it amounted to much, but because of the principle of the thing.
4. I like to let people know where I stand on things.
5. I am so often annoyed when someone tries to get ahead of me in a line of people, that I speak to that person about it.
6. I have often times had to be rough with people who were rude or annoying.
7. I am often inclined to go out of my way to win a point with someone who has opposed me.
8. I am usually very direct with people I am trying to correct or improve.
9. I do not try to cover up my poor opinion or pity of people so that they won't know how I feel.
10. I strongly defend my opinion as a rule.
11. When people do something that makes me angry, I let them know how I feel about it.
12. I like to drive a hard bargain.
13. I like making decisions and assigning jobs to others.